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By Theodore Roosevelt.

**THE EXHAUSTION OF THE LUMBER SUPPLY.**

By R. L. McCormick.

**THE LUMBERMAN AND THE FORESTER.**

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# United States Department of Agriculture,

BUREAU OF FORESTRY—CIRCULAR No. 25.

GIFFORD PINCHOT, Forester.

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U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF FORESTRY,
*Washington, D. C., June 11, 1903.*

SIR: I have the honor to transmit herewith three papers on forestry, which are especially intended for lumbermen, and to recommend their publication as Circular No. 25 of the Bureau of Forestry.

Respectfully,

GIFFORD PINCHOT, *Forester.*

Hon. JAMES WILSON,
*Secretary of Agriculture.*

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## FORESTRY AND THE LUMBER SUPPLY.

### INTRODUCTION.

This circular is addressed particularly to lumbermen.

In the three papers printed below the President of the United States, the secretary of a great lumber company, and the chief of the Bureau of Forestry show that forestry is necessary for the perpetuation of the lumber industry in this country. The statement is not new, but never before has it been given such authority, nor has the urgent need of forestry on lumber tracts been so emphatically set forth. Three men in positions that compel them to regard such a question from different view points—the President regarding it as a National problem, Mr. McCormick from the standpoint of a lumberman, Mr. Pinchot from that of a forester—have reached practically the same conclusion. President Roosevelt declares that forestry is "in many ways the most vital internal problem in the United States," and that "the very existence of lumbering depends upon the success of our work as a nation in putting practical forestry into effective operation." Mr. McCormick calls attention to the critical condition of the lumber industry, recommends the practice of conservative lumbering wherever it pays, and calls the working plans for timber tracts prepared by the Bureau of Foresty "the best business policy

for their management, based on a thorough expert examination." Mr. Pinchot shows just why forestry is a good business measure for the lumberman, and explains the various ways in which the Bureau of Forestry is serving the lumber interests of the country.

## FORESTRY AND FORESTERS.[a]

By THEODORE ROOSEVELT.

I have felt that the meeting this evening was of such a character as not merely to warrant but to require that I should break through my custom of not going out to make speeches of this sort, for I believe that there is no body of men who have it in their power to-day to do a greater service to the country than those engaged in the scientific study of, and practical application of, approved methods of forestry for the preservation of the woods of the United States. I am glad to see here this evening not only the officials, including the head of the Department of Agriculture, but such men as Governor Richards, who are most concerned in carrying out the policy of the Department of the Interior, because the forest policy of any country must be an essential part of its land policy.

And now, first and foremost, you can never afford to forget for one moment what is the object of our forest policy. That object is not to preserve the forests because they are beautiful, though that is good in itself, nor because they are refuges for the wild creatures of the wilderness, though that, too, is good in itself; but the primary object of our forest policy, as of the land policy of the United States, is the making of prosperous homes. It is part of the traditional policy of home making of our country. Every other consideration comes as secondary. The whole effort of the Government in dealing with the forests must be directed to this end, keeping in view the fact that it is not only necessary to start the homes as prosperous, but to keep them so. That is why the forests have got to be kept. You can start a prosperous home by destroying the forests, but you can not keep it prosperous that way.

And you are going to be able to make that policy permanently the policy of the country only in so far as you are able to make the people at large, and, above all, the people concretely interested in the results in the different localities, appreciative of what it means. Impress upon them the full recognition of the value of its policy, and make them earnest and zealous adherents of it. Keep in mind the fact that in a government such as ours it is out of the question to impose a policy like this from without. The policy, as a permanent policy, can come only from the intelligent conviction of the people themselves that it is wise and useful; nay, indispensable. We shall decide, in the

[a] Address delivered March 26, 1903, before The Society of American Foresters, a professional body, of which President Roosevelt is an associate member.

long run, whether or not we are to preserve or destroy the forests of the Rocky Mountains accordingly as we are or are not able to make the people of the mountain States hearty believers in the policy of forest preservation.

That is the only way in which this policy can be made a permanent success. You must convince the people of the truth—and it is the truth—that the success of home makers depends in the long run upon the wisdom with which the nation takes care of its forests. That seems a strong statement, but it is none too strong.

You yourselves have got to keep this practical object before your mind; to remember that a forest which contributes nothing to the wealth, progress, or safety of the country is of no interest to the Government and should be of little interest to the forester. Your attention must be directed to the preservation of the forests, not as an end in itself, but as a means of preserving and increasing the prosperity of the nation.

"Forestry is the preservation of forests by wise use," to quote a phrase I used in my first message to Congress. Keep before your minds that definition. Forestry does not mean abbreviating that use; it means making the forest useful not only to the settler, the rancher, the miner, the man who lives in the neighborhood, but, indirectly, to the man who may live hundreds of miles off down the course of some great river which has had its rise among the forest-bearing mountains.

The forest problem is in many ways the most vital internal problem in the United States. The more closely this statement is examined the more evident its truth becomes. In the arid region of the West agriculture depends first of all upon the available water supply. In such a region forest protection alone can maintain the stream flow necessary for irrigation, and can prevent the great and destructive floods so ruinous to communities farther down the same streams that head in the arid regions.

The relation between the forests and the whole mineral industry is an extremely intimate one; for, as every man who has had experience in the West knows, mines can not be developed without timber—usually not without timber close at hand. In many regions throughout the arid country ore is more abundant than wood, and this means that if the ore is of low grade, the transportation of timber from any distance being out of the question, the use of the mine is limited by the amount of timber available.

The very existence of lumbering, of course—and lumbering is the fourth great industry of the United States—depends upon the success of our work as a nation in putting practical forestry into effective operation.

As it is with mining and lumbering, so it is in only a less degree with transportation, manufactures, commerce in general. The relation

of all of these industries to forestry is of the most intimate and dependent kind. It is a matter for congratulation that so many of these great industries are now waking up to this fact; the railroads especially, managed as they are by men who are compelled to look ahead, who are obliged by the very nature of their profession to possess a keen insight into the future, have awakened to a clearer realization of the vast importance of the economic use both of timber and of forests.

Even the grazing industry, as it is carried on in the great West, which might at first sight appear to have little relation to forestry, is nevertheless closely related to it, because great areas of winter range, available and good for winter grazing, would be absolutely useless without the summer range in the mountains where the forest reserves lie.

As all of you know, the forest resources of our country are already seriously depleted. They can be renewed and maintained only by the cooperation of the forester with the practical man of business in all his types, but above all, with the lumberman. And the most striking and encouraging fact in the forest situation is that lumbermen are realizing that practical lumbering and practical forestry are allies, not enemies, and that the future of each depends upon the other. The resolutions passed at the last meeting of the representatives of the lumber interests, which occurred here in Washington, were a striking proof of this fact and a most encouraging feature of the present situation. So long as we could not make the men concerned in the great lumber industry realize that the foresters were endeavoring to work in their interest, and not against them, the headway that could be made was but small. We shall be able to work effectively and bring about important results of a permanent character largely in proportion as we are able to convince those men, the men at the head of that great business, of the practical wisdom of what the foresters of the United States are seeking to accomplish.

In the last analysis, the attitude of the lumbermen toward your work will be the chief factor in the success or failure of that work. In other words, gentlemen, I can not too often say to you, as, indeed, it can not be too often said to any body of men of high ideals and good scientific training who are endeavoring to accomplish work of worth for the country, that you must keep your ideals high and yet must seek to realize them in practical ways.

The United States is exhausting its forest supplies far more rapidly than they are being produced. The situation is grave, and there is only one remedy. That remedy is the introduction of practical forestry on a large scale, and of course that is impossible without trained men, men trained in the closet, and also by actual field work under practical conditions.

You have created a new profession of the highest importance, of the highest usefulness to the State, and you are in honor bound to yourselves and the people to make that profession stand as high as any other profession, however intimately connected with our highest and finest development as a nation. You are engaged in pioneer work in a calling whose opportunities for public service are very great. Treat that calling seriously; remember how much it means to the country as a whole. The profession you have adopted is one which touches the Republic on almost every side—political, social, industrial, commercial; to rise to its level you will need a wide acquaintance with the general life of the nation, and a view point both broad and high.

Any profession which makes you deal with your fellow-men at large makes it necessary that if you are to succeed you should understand what those fellow-men are, and not merely what they are thought to be by people who live in the closet or the parlor. You have got to know who the men are with whom you are to work, how they feel, how far you can go, when you have to stop, when it is both safe and necessary to push on.

I believe that the foresters of the United States will create a more effective system of forestry than we have yet seen. If not, gentlemen, if you do not, I shall feel that you have fallen behind your brethren in other callings, and I do not believe that you will fall behind them. Nowhere else is the development of a country more closely bound up with the creation and execution of a judicious forest policy. This is, of course, especially true of the West, but it is true of the East also. Fortunately, in the West we have been able, relatively to the growth of the country, to begin at an earlier day, so that we have been able to establish great forest reserves in the Rocky Mountains instead of having to wait and attempt to get Congress to pay large sums for their creation, as we are now endeavoring to do in the Southern Appalachians.

In the administration of the national forest reserves, in the introduction of conservative lumbering on the timber tract of the lumberman and the wood lot of the farmer, in the practical solution of forest problems which affect well nigh every industry and every activity of the nation, the members of this society have an unexampled field before them. You have a heavy responsibility—every man that does serious work, work worth doing, has on him a heavy responsibility—for upon the development of your work the development of forestry in the United States and the production of the industries which depend upon it will largely rest. You have made a good beginning, and I congratulate you upon it. Not only is a sound national forest policy coming rapidly into being, but the lumbermen of the country are proving their interest in forestry by practicing it.

Twenty years ago a meeting such as this to-night would have been impossible, and the desires we here express would have been treated

as having no possible relation to practical life. I think that since the present Secretary of Agriculture first came into Congress here there has been a complete revolution in the attitude of the public mind toward this question. We have reached a point where American foresters trained in American forest schools are attacking American forest problems with success. That is the way to meet the larger work you have before you. You must instill your own ideals into the mass of your fellow-men and at the same time show your ability to work with them in practical and business fashion. This is the condition precedent to your being of use to the body politic.

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## THE EXHAUSTION OF THE LUMBER SUPPLY.

By R. L. McCormick.

*President of the Mississippi Valley Lumbermen's Association, and Secretary of the Weyerhaeuser Timber Company.*

Every man in the lumber business to-day whose dealings are of sufficient extent to be subject to influences beyond those of purely local demand and supply realizes that the lumber industry is in many regions confronted by a growing scarcity of available timber. Statistics point to it. Estimates of timber resources still remaining point to it also. But the strongest proof lies in the conditions which already affect our industry.

It is just cause for congratulation that so far as the actual harvesting of timber and its manufacture into lumber is concerned, American lumbermen are far ahead of those of any other country in enterprise, ingenuity, and skill in methods and machinery. But in spite of the money saved in lumbering by better methods, we are obliged to charge more and more for our lumber in order to manufacture it at a profit. In every operation in the woods and in the mill rigid economy is necessary now instead of the loose and lavish methods under which it was possible formerly to make lumbering a profitable business. We have gone so far already that it is probable we can not materially lower the cost of our product in the future. Labor-saving devices can never in themselves prove an adequate remedy. The trouble lies, not in the cost of manufacture, but in the dwindling supplies of the timber itself.

It is not necessary to turn to statistics for proof that the supply of certain kinds of valuable timber trees of the United States is rapidly failing, of others is practically gone, and of still others has entirely vanished as a factor in the lumber market. For example, ten years ago the use of balsam in the manufacture of paper pulp was practically unknown. The eastern hemlock is now valuable for its timber as well

as for its bark. A more modern instance is the gradual rise in importance of the western hemlock, until very recently altogether discredited as a timber tree, although, in fact, of great commercial power. The red fir of the Northwest and the southern pines are rapidly invading markets formerly controlled altogether by the white pine of the North Central States, while species of peculiar value, such as black walnut and black cherry, have practically vanished from the market in the grades which once were common. The southern pines are being destroyed with a rapidity which finds its parallel only in the case of northern white pine. It is true that the list of commercial timbers lengthens from year to year. Just as the balsam is taking the place of the spruce, so are substitutes coming in for other woods which no longer exist in sufficient quantity to supply the demand. But neither can this prove a sufficient remedy. The supply of the substitutes will be exhausted in its turn, and the final situation will be worse than that which confronts us now. It is no longer a question of methods of manufacture, or of substitutes for exhausted supplies. The time for us to look after the trees themselves has in many cases already arrived.

Statistics of the merchantable timber still standing in this country are difficult to make because the forest area is vast, and for large portions of it we are without accurate knowledge. But in Mr. Henry Gannett's report upon lumber, in the Twelfth Census of the United States, he has made good use of the data at hand, and he presents facts which are significant, based upon information sufficient to sustain them. I wish to call your attention to a few of these.

There is probably no forest in the world so immense, so accessible, so easy to lumber, and so regular in the high quality of its timber as was the great pinery which occupied the region of the Great Lakes and of the Upper Mississippi. The forests of Michigan, Wisconsin, and Minnesota originally contained a stand of about 350,000,000,000 feet. Of this Michigan had about 150,000,000,000; Wisconsin, 130,000,000,000; and Minnesota about 70,000,000,000 feet. Lumbering began in Michigan and Wisconsin during the thirties, and was of small importance until the early seventies. Since then the great pinery has been cut over in a way unprecedented in lumbering. In 1873 the cut was about 4,000,000,000 feet. It reached high-water mark in 1892, when it was over 8,500,000,000 feet. Since then it has steadily fallen, and in 1902 it was a little over 5,000,000,000. To the enormous total of about 188,000,000,000 feet cut in the last thirty years there must be added about 28,000,000,000 feet, or 15 per cent, for laths, shingles, and minor produce, making a total of 216,000,000,000 feet. Fifty billion feet were probably cut prior to 1873, which would bring the total product of the Lake States to about 265,000,000,000 feet. As the estimate of the original stand amounted to about 350,000,000,000 feet, it would seem that after the cut of 1902, exclusive of

second growth, there were 85,000,000,000 feet standing. There are, however, by careful estimate, not more than 35,000,000,000 feet of merchantable timber, which also includes undoubtedly a considerable amount of second growth. Of the vast discrepancy only a part can be put down to error, since we know enough of the fire history of these States to ascribe the loss of 60,000,000,000 feet to fire. These figures show that it is a safe and conservative statement that the end of the white pine is near, and that ten years will see it disappear as an important factor in the lumber trade.

The present stand of yellow pine in the Southern States has been stated by Mr. R. A. Long, in a paper read before the annual meeting of the Southern Lumber Manufacturers' Association, to be about 137,000,000,000 feet. About 163,000,000,000 feet have probably been lumbered already. For the census year of 1900 the total cut of yellow pine was given as nearly 10,000,000,000 feet. These figures show that at the present rate of consumption the present stand of longleaf yellow pine will be exhausted long before a second crop can be produced to take its place.

It is not necessary to multiply instances. It would merely be to provide you with facts of which you have a keen realization already. The lumber industry ranks fourth among the great industries of the United States. It has, in my judgment, done more to develop this country than any other private enterprise except the railroads, and the rapid growth of the latter would in many cases have been impossible without the parallel development of lumbering. But in lumbering, as in all other great private industries, the necessity for care is not seen until the harm has been done and until the results of it are bitterly felt. We have reached the point now when we are often unable to supply the enormous demand for lumber which we have fostered. We must look to the production of a second crop upon lumbered lands or prepare to stop lumbering when the first crop is gone. In the old days it was easy to lumber one forest and then turn to another. To-day, however, we can not count upon new fields to turn to. We must make the best of what we have, and wherever it pays we must lumber conservatively.

Practical forestry means conservative lumbering. The question whether conservative lumbering pays depends upon whether the value of the second crop upon lumbered lands is sufficient to make it a profitable enterprise to foster and protect it, and in many cases the time has already come when practical forestry is a good business investment for lumbermen. We have received a good deal of abuse for what has been called our vandalism—abuse which was unreasonable and which was not accompanied by pertinent suggestions for reform; but now the Bureau of Forestry of the United States Department of Agriculture puts the question of conservative lumbering in a way which makes

it worthy the attention of lumbermen. It is the attitude of this Bureau that forestry and lumbering are allies, not enemies, and that the interests of one depend directly upon those of the other. The Bureau does not claim that forestry is the panacea for every lumberman's troubles, nor that it is now applicable to every timber tract in this country. It simply holds itself in readiness to assist lumbermen in applying practical forestry to their holdings in those cases in which it is evident that conservative lumbering will pay. The Bureau of Forestry does not deal with forest problems merely in a general way. It gives each timber tract upon which its assistance is requested a careful study on the ground, and it draws up its final plan for management with due regard to the purpose and point of view of the lumberman. In other words, its work is eminently practical and businesslike, not purely scientific and theoretical.

The advice given by the Bureau of Forestry in its working plans for the handling of timber tracts is, in a word, the best business policy for their management based on a thorough expert examination. In my judgment, the opportunity is worthy of your close attention, and I commend it to you.

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## THE LUMBERMAN AND THE FORESTER.[a]

By Gifford Pinchot,

*Forester, U. S. Department of Agriculture.*

It is only a few days since President Roosevelt, speaking to The Society of American Foresters, a body of professional foresters, said that in the final analysis the success of forestry must depend upon the attitude of the lumbermen toward it. That view is accepted and believed by no one more completely than by the foresters, and it is, first of all, for that reason that I am glad of this opportunity to say a word to you. I realize that the great majority of the timber lands of the United States will pass through your hands first or last, and that upon your attitude toward them will depend the final result not only to you in your business but to the nation at large in the perpetuation of its forests.

One of the recent tendencies in the lumber business has been to reduce waste in every possible direction. You have taken this up first of all in the mill; it has gone from the mill to the woods and the methods of logging, and in many parts of the country has already begun to affect methods of cutting. This tendency to avoid waste, to make better use of natural resources, is not confined to the lumber trade by any means. It is characteristic now of all the industries

[a] Address delivered before convention of National Lumber Manufacturers' Association, Washington, D. C., April 20, 1903.

of the United States, and is the logical outcome of the economic situation, just as, in my belief, the interest of the lumbermen in forestry must necessarily be the logical outcome of the economic conditions under which the lumber business is placed. You have naturally and logically moved forward step by step in this progress of eliminating waste, making more out of the material with which you have to work. It is perfectly logical and natural, therefore, that the next step for you to consider is the use of your standing timber, not merely for itself alone but also in relation to the value of the land to you later on. That is the whole essence of forestry. As President Roosevelt has phrased it, "The principal idea in forestry is the preservation of forests by wise use," and the conception upon which the whole matter is based is simply the question of whether or not you intend to get a second crop.

The old idea that the forester was the enemy of the lumberman, and, above all, the enemy of cutting timber, disappeared long ago from the minds of foresters, or rather friends of forestry—for no true forester ever held it—and is rapidly disappearing from your minds and those of other lumbermen. And that is perhaps the happiest aspect of the whole situation, for the perpetuation alike of your industry and of forestry depends upon your attitude toward this single question: Do you or do you not intend to get a second crop?

I am very far from wanting to discuss with you the supplies of standing timber or the prospect of a timber famine—questions with which you are more familiar than I am; but it is perfectly obvious that the supplies of certain kinds of timber are rapidly disappearing, that the lumber trade is falling back year by year on poorer material and longer hauls, and that the question of its continuance is already demanding an answer.

This is purely a business proposition which I want to lay before you, to be considered, accepted, or rejected on a business basis. Forestry deals with the forest in some ways with which you have but an indirect interest. I am not talking now about the effect of forests on the flow of streams, on winds, or on the general prosperity—matters of vital importance in their place; but the question I want to bring to you is simply this: Is it worth your while, from a commercial point of view, to consider the forest as a part of your plant, and from that point of view should you cut off your timber and let the land go back for taxes?

Let us take an illustration. Suppose any one of you has a tract of timber land in Arkansas, for example—for we have some good figures for that State. You find that under certain conditions, which make practically no difference in the cost of getting out your logs—and it is the business of the Bureau of Forestry to ascertain what those conditions are—you can get a second crop of the same amount off that land

in forty years. It will be a man's tendency, as it was mine when I began this work, to think of forty years as a very long time, a period beyond ordinary calculation, hardly worth while to figure on. Nevertheless, if I interpret the economic tendency of the country at all rightly, men look farther ahead now than they once did, and it is very well worth their while to do so. We will say that in forty years you can get a second crop on that land equal to the first. We take the stumpage at its present value, with taxes as they now stand, and we estimate the expense of protection against fire and theft. We find in this particular case that the returns on the capital invested for those forty years is 6 per cent net. That is calculated on the basis of the present value of stumpage. We all know that the value of stumpage will increase largely in forty years. The matter becomes, then, simply a question of whether or not it is worth your while to take the incidental risks and hold your land for forty years rather than to put your money into something else. But it is not a question of whether you will put the money back into your land after taking the timber off of it, but whether you will take the timber off in such a way that when you have cut over the land it will be in condition to go on producing timber without further expense. Either the timber land is part of the manufacturing plant, or it is not, and that is the whole difference.

If you are the owner of a mill, as of course you all are, you must necessarily consider, if you want to keep that mill in permanent operation, how much land you need to grow timber to supply you with your daily cut. Then you have a complete plant which is like a machine shop, turning out material for its own needs. From the point of view of the forester, where a business question is as clear cut as that, it becomes as foolish to destroy the productive capacity of your land as it would be for the owner of a machine shop, when he had an order for a shaft or a cog wheel, to take that shaft or cog wheel out of his own machinery and sell it rather than make his machines produce it. As I have said, and repeat, this is purely a business question.

The Bureau of Forestry offers certain assistance to lumbermen in preparing the basis upon which such questions can be most intelligently decided. What it does is simply to put a certain amount of trained skill at your command. You pay the expense and we prepare for you the necessary figures. The way we do it is to send a man to the spot who finds out what there is on the ground, with special reference to the smaller sizes—how fast each diameter class of trees grows, how much will be left of certain sizes after cutting out others, and how much will be standing to the acre after a definite number of years. We put the thing purely and entirely on a business basis.

These methods of forestry are not at present as fully applicable everywhere in the United States as they will be later on, and it is as far from me as possible to want to urge any man to adopt the methods

of forestry unless they are going to pay. The arrangement we make with timber owners is never that they shall be compelled to apply the plans we submit, but always that they shall apply them or not as they find it wisest to do. I would be exceedingly sorry if any man should take up a proposition in forestry and apply it if he was not confident it would turn out well, because this is not a question of a few days or merely for present conditions.

What I have been describing to you is, of course, only one of the ways in which the Bureau of Forestry is attempting to serve the lumber interests of the United States. Another is a very extensive series of timber tests which we are just taking up to learn the comparative merits of different timbers for different purposes; and there are many others, some dealing directly with the lumber interests and some indirectly. But the essence of what I have to say to you to-day is simply that this matter of practical forestry is presented to you as a business proposition, to be accepted or rejected as a business proposition, and that my interest in it and the object of my presence here is simply to ask you whether it is worth your while to consider your forests as a part of your plant or whether it is better worth your while to abandon them after they have been cut.

I shall be very glad, indeed, if I can answer any questions which may come up now or later on, and I shall be especially glad if I or any other member of the Bureau of Forestry can be of use to you, individually or collectively, in any possible direction. There has been too long a feeling that the foresters were trying to force the lumbermen to do something or other against the lumbermen's will. I think it is time for the lumbermen to give the Bureau of Forestry a chance to do some things which they would like to have it do.

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